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FOCAL IN ON-LINE DATA PROCESSING

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## FOCAL IN ON-LINE DATA PROCESSING

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## ABSTRACT

FOCAL is developed to be used as processor of on-line measuring.

## РЕЗЮМЕ

FOCAL используется в организации устройств, работающих на линии с ЭВМ ТРА-1

## KIVONAT

A leírt változtatások lehetővé teszik mérések adatainak on-line feldolgozását FOCAL nyelven.

## INTRODUCTION

The described modification of FOCAL 69 allows the user to write FOCAL programs for processing data supplied by on-line terminals /Fig. 2/.

Modification of the Service Routine:

		FIELD C
		HINEUF=37
		*17C
C17C	C20C	SERV C
		*2644
2644	6C11	RSF
2645	5250	JMF .+3
2646	6C16	REB
2647	3C37	DCA HINEUF
2650	6212	6212 /CIF 1
2651	557C	JMF 1 17C
2652	6244	6244 /RESTORE MEMORY FIELD
		FIELD 1
		*20C
C20C	6211	SERV C, 6211 /CDF 1
		/
		/
		/NEW PERIPHERAL EQUIPMENTS
		/
		/
C201	6201	6201 /CDF C
C202	6202	6202 /CIF C
C203	5604	JMF 1 .+1
C204	2652	2652

Fig. 1

So the user may connect new peripherals into the service routine and store the data of these peripherals into FIELD 1.



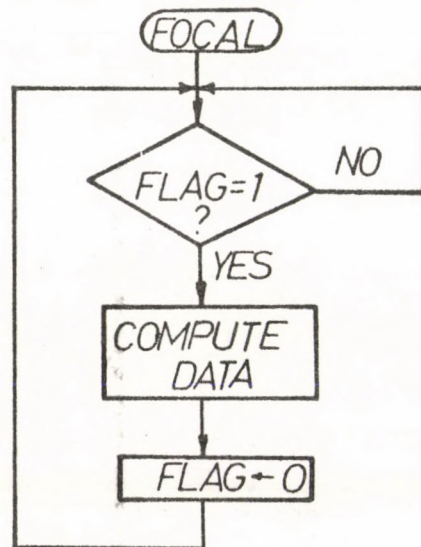
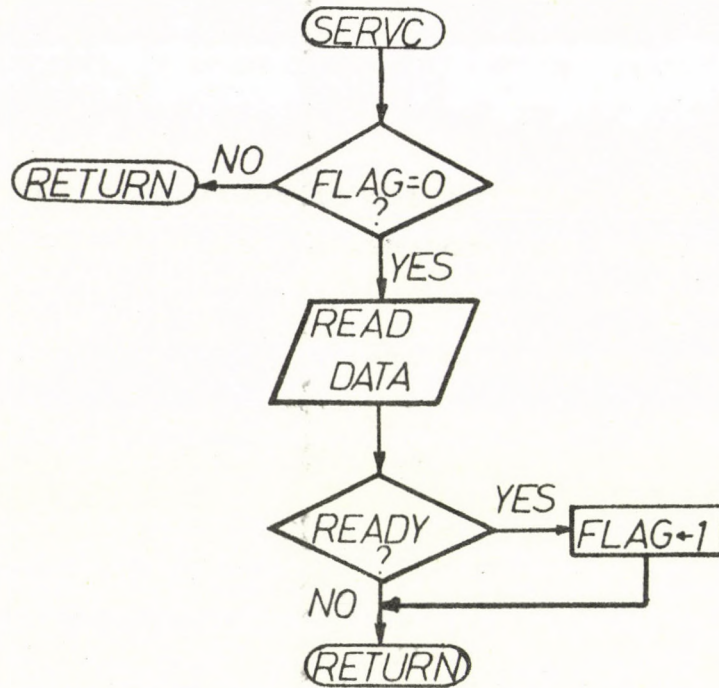


FIGURE 2.

Function FNEW:

```

EVAL=1601
FCOS=5112
TSTERM=4565
ERROR=4526
PUSHJ=4501
XFIX=7311
XFLOAT=7332
RETURN=5500
LOTTOM=27

      *CC6
CC06  5055      FNEW
      *LOTTOM
CC27  5054      FNEW-1
      *FCOS-35
5055  4711  FNEW,  FIX
5056  3310      DCA FN
5057  4565      TSTERM
5060  4526      ERROR
5061  4526      ERROR
5062  4501      PUSHJ
5063  1601      EVAL
5064  4711      FIX
5065  3307      DCA LC
5066  1310      TAD FN
5067  7710      SFA CLA
5070  5276      JMF .+6
5071  6211      6211 /CDF 1
5072  1707  FEND,  TAD I LC
5073  6201      6201 /CDF 0
5074  4712      FLOAT
5075  5500      RETURN
5076  4565      TSTERM
5077  4526      ERROR
5100  4526      ERROR
5101  4501      PUSHJ
5102  1601      EVAL
5103  4711      FIX
5104  6211      6211 /CDF 1
5105  3707      DCA I LC
5106  5272      JMF FEND
5107  0000  LC,    C
5110  0000  FN,    C
      FIX=JMS I .
5111  7311      XFIX
      FLOAT=JMS I .
5112  7332      XFLOAT

```



The call of FNEW is as follows:

SET Z = FNEW (WR, LC, U)

FOCAL programs may read data from FIELD 1 or may store data into FIELD 1 in form of a single word fixed-point format by using FNEW.

Parameters:

WR = 1 reading  
-1 writing

LC = Decimal address of the word in FIELD 1

V = Value to store /in case of writing/.

All the parameters WR, LC and V may be numbers, variables or expressions.

Note: Further parameters may be added in order to determine various fields and the length of words of the fixed-point format.

In the following example 21 values are stored in FIELD 1 and a histogram of these values is printed.



+  
+  
+W  
+G

C-FOCAL, 5/69

```

C1.10 S XL=100; S XH=120
C1.20 F I=XL,XH; S Z=FNEW(-1,I,15*(1+FSIN((I-XL)*3.14/10)))
C1.30 D 2; T !!!; Q

C2.10 S S=C; S M=C
C2.20 F I=XL,XH; S W=FNEW(1,I); S S=S+W; S M=M+(I-XL+1)*W
C2.30 T !!!, "HISTOGRAM 1974. VI. 1C.", !!
C2.40 T " BIN CONT ENTRIES=", %, S, " MEAN=", M/S, !
C2.50 F I=XL,XH; S W=FNEW(1,I); T !, %4.0, I-XL+1, W, " "; F J=1, W; T "X"

```

HISTOGRAM 1974. VI. 1C.

BIN CONT ENTRIES= .306000E+03 MEAN= .736274E+01

```

1 15 XXXXXXXXXXXXXXXX
2 19 XXXXXXXXXXXXXXXX
3 23 XXXXXXXXXXXXXXXX
4 27 XXXXXXXXXXXXXXXX
5 29 XXXXXXXXXXXXXXXX
6 30 XXXXXXXXXXXXXXXX
7 29 XXXXXXXXXXXXXXXX
8 27 XXXXXXXXXXXXXXXX
9 23 XXXXXXXXXXXXXXXX
10 19 XXXXXXXXXXXXXXXX
11 15 XXXXXXXXXXXXXXXX
12 10 XXXXXXXXXXXX
13 6 XXXXXX
14 2 XX
15 0
16 0
17 0
18 2 XX
19 6 XXXXXX
20 10 XXXXXXXXXXXX
21 14 XXXXXXXXXXXX

```

## REFERENCES

1. Introduction to Programming, Digital Equipment Corporation, 1969, 1970
2. FOKAL TPA-IY-01-MA, TPA-IY-02-MA, TPA-IY-03-MA, KFKI
3. Programming Language, DEC, 1970





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Kiadja a Központi Fizikai Kutató Intézet  
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Szakmai lektor: Telbisz Ferenc  
Nyelvi lektor : Sebestyén Ákos  
Példányszám: 340 Törzsszám: 74-10.128  
Készült a KFKI sokszorosító üzemében  
Budapest, 1974. szeptember hó